INFORMATION FOR APPLICANTS

TENURE TRACK PROFESSORSHIP FORMAL METHODS FOR DEPENDABILITY

CONTENT

EXECUTIVE SUMMARY

The Faculty of Computer Science and Biomedical Engineering at Graz University of Technology is seeking applicants for the position of a **tenure track professorship for Formal Methods of Dependability.**

The Faculty of Computer Science and Biomedical Engineering at Graz University of Technology is committed to excellence in research and teaching. The faculty's research activities cover a broad spectrum of topics that are reflected in its main research areas, **Biomedical Engineering, Safety and Security, Intelligent Systems** and **Visual Computing**. We are proud of our outstanding applied and fundamental research expertise and promote interdisciplinary projects. Moreover, our faculty fosters a close dialogue with industry and encourages and supports the creation of spin-off companies.

We are looking for an excellent researcher with a background in formal methods for dependable secure systems. She or he is expected to carry out basic research in formal modeling, analysis, verification and synthesis and is interested in applications to security and/or artificial intelligence. We offer an interesting research environment, research questions with practical relevance, and integration in a motivated team of researchers and developers.

The professorship will be part of the **Institute of Applied Information Processing and Communications (IAIK)** and the research focus of the candidate should complement the current faculty positions of the institute.

GRAZ UNIVERSITY OF TECHNOLOGY

In world-wide competition with comparable institutions, Graz University of Technology pursues top teaching and research in the fields of the engineering sciences and the technical natural sciences. Knowing about the needs of society and the economy is an integral part of putting together excellent education and training programs. Ultimately, the quality of the education and trai ning at Graz University of Technology is carried by the strength of its knowledge-oriented and applied research.

DEPARTMENT OF COMPUTER SCIENCE
& BIOMEDICAL ENGINEERING

Computer science is one of the fastest growing and most innovative sectors. This dynamic is also reflected at the TU Graz. With its **47 professors** and 10 institutes, the Department plays a central role within the university and focuses its research on four research fields **Intelligent Systems, Visual Computing, Security & Safety,** and **Biomedical Engineering**. The Department's scientific achievements are remarkable: apart from employing three of the most cited researchers at TU Graz, it has brought out **three ERC and three Austrian START grant recipients** and is represented in major scientific rankings such as the Performance Ranking of Scientific Papers of the National Taiwan University. Moreover, the Department leads an FWF-funded national research network, a Christian Doppler Laboratory, a COMET Competence Center and acquires significant funding from EU and national sources.

As an innovation engine, the Department significantly contributes to the economy and has tremendous growth potential, with **30 start-ups with more than 1000 employees** to attest to that. The services of the Department have a great impact on TU Graz: its top position in international research and teaching, its visibility and effect on the society, its internationalizing PhD and Master studies, its inter-university cooperation and its industrial networking. The new professorship will be anchored in the Department of Computer Science and Biomedical Engineering and will strengthen the competence field „**Security & Safety**".

" THIS PROFESSORSHIP IS AN ESSENTIAL ELEMENT OF THE SCIENTIFIC AND STRATEGIC ORIENTATION OF TU GRAZ. "

HARALD KAINZ
RECTOR GRAZ UNIVERSITY OF TECHNOLOGY

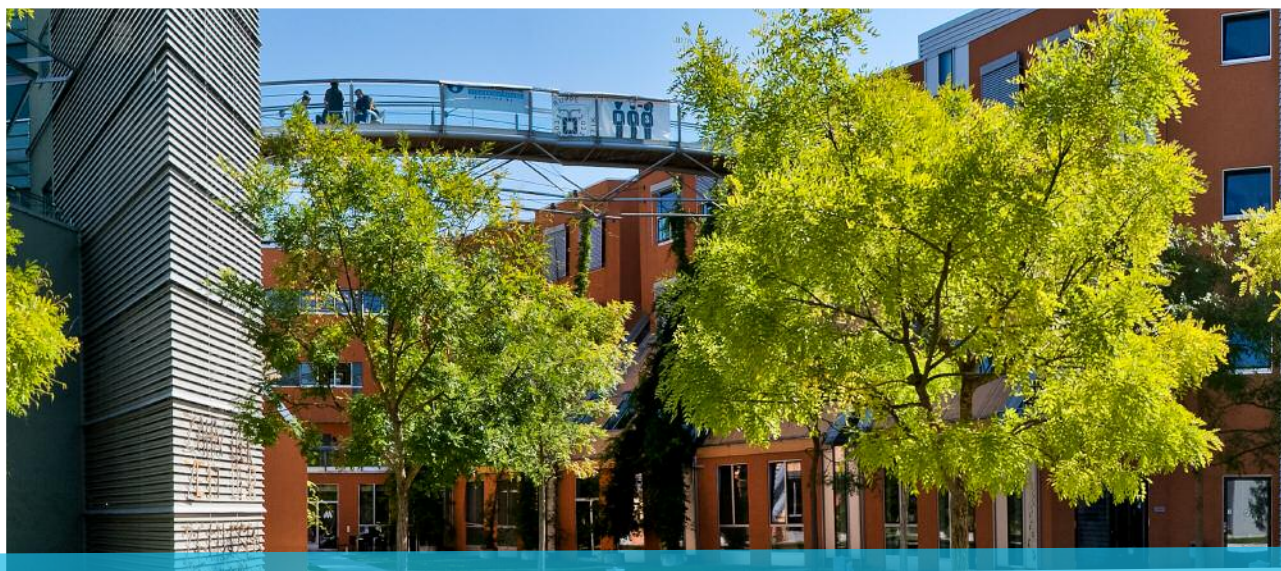# TENURE TRACK PROFESSORSHIP FOR FORMAL METHODS FOR DEPENDABILITY

The advertised position is a tenure-track career position for an initial period of 6 years (pursuant to § 99 para. 5 of the Universities Act). After the conclusion of a qualification agreement, the job holder is appointed as **Assistant Professor**. After a positive evaluation of the qualification agreement, the position will be turned into a permanent position as **Associate Professor**. After a further competitive procedure, the promotion to **Full Professor** is possible.

Graz University of Technology provides excellent working conditions in a lively scientific community combined with the outstanding living quality of the Graz area.
The position will be paid according to category B1 of the collective agreement for employees of Austrian universities, stipulating a gross salary of € 59.003,00 (including social and health insurance).

We are seeking a candidate with proven scientific expertise who will represent the field of Formal Methods for Dependability in research and teaching. The successful candidate will complement existing strengths at the institute and be an engaged teacher in the computer science programs at the bachelor, master, and PhD level. The professorship includes establishing an independent research group. In addition, Austria offers many funding opportunities and there are many potential industrial cooperation partners directly in the area of Graz. In fact, with an R&D rate of more than 5%, Styria is one of the most research-intensive regions of the European Union.

INSTITUTE FOR APPLIED INFORMATION PROCESSING AND COMMUNICATIONS

With 30 years of research in IT security, the Institute for Applied Information Processing and Communications (aka IAIK) is a major player in the field. More than 60 researchers work on topics like security architectures, side channels, cryptography, formal methods, or e-government.

Among the recent sparkling highlights of IAIK's research are the processor vulnerabilities known as **"Meltdown"** and **"Spectre"**. IAIK cryptographers have contributed to most major competitions in cryptography, like **AES, SHA-3, and CAESAR**; these contributions were always shortlisted or even won the competition. IAIK has built a strong presence in formal methods with a focus on reactive synthesis and, more recently, verification of security constructs.

We collaborate closely with research groups and industry partners around the globe. The recently announced **Cybersecurity Campus Graz** also creates a unique local environment. This new hub for information security unites basic research, education, technology transfer, and industry partners all under one roof.

The courses of IAIK typically are among the best evaluated of the computer science curricula. At bachelor's level, these courses are computer organization, operating systems, computer networks, systems programming, logic and computability, and information security. The courses at master's level are strongly influenced by IAIK's current research. IAIK also hosts LosFuzzys – a very active group of students who are among the top 50 teams worldwide in capture-the-flag competitions.

CURRENT FACULTY AT IAIK

PROF. RODERICK BLOEM
Formal Methods and Security

ASS. PROF. MARIA EICHLSEDER
Cryptography

ASS. PROF. DANIEL GRUSS
Microarchitectural Security

PROF. STEFAN MANGARD
Embedded and Hardware Security

PROF. CHRISTIAN RECHBERGER
Cryptography

INFORMATION SECURITY COURSES AT TU GRAZ

Information security is part of three curricula at Graz University of Technology:

- Computer Science
- Information and Computer Engineering
- Software Engineering and Management

Currently, about 2700 students are enrolled in the corresponding bachelor and master programs. The education in information security starts with a compulsory 7 ECTS course in the bachelor program and then continues with more than 10 specialized elective courses during the master program.

There is the opportunity for the new professor to teach one of the existing courses as well as to establish new courses in information security. Teaching is done in English or German at the bachelor level. The master programs are all in English.

WHY GRAZ?

CULTURAL AND UNIVERSITY TOWN IN THE STYRIAN TUSCANY. WITH PLENTY OF SUN!

CITY OF KNOWLEDGE

GRAZ HAS BEEN A UNIVERSITY TOWN SINCE 1585

Know-how from Graz goes international. Six universities with more than 16 faculties form the basis of the excellent international reputation of Graz as a research and academical location. With nearly 60.000 students of 290.000 inhabitants, Graz more than deserves the title "student town".

CULTURAL CAPITAL

CITY OF CONTRASTS

Graz, the exciting city of culture, and particularly its historic city centre, offers the ideal location to stage seminars, trade fairs or conferences. It is not by chance that Graz is a UNESCO World Cultural Heritage site. The historic city centre around Schlossberg hill has been growing for centuries and became a township well worthy of admiration. Since the Middle Ages, the unique and well preserved architectural styles spanning from Gothic, Baroque, Renaissance, Art Nouveau and, of course, the modern, have not only seen an increase in value but are also indicative of a sense of tradition and art. In fact, contemporary art and architecture enrich the cultural scene as much as classical culture: the Graz Opera House, theatres and festivals of classical music. In 2003, Graz was also acclaimed European Capital of Culture. "The Friendly Alien" art centre and the Island in the Mur still bear witness to that year of celebration.

CAPITAL OF CULINARY DELIGHTS

MEET WITH DELIGHT

Styria offers many local food specialties, like Styrian pumpkin seed oil, Käferbohnen beans, Grazer Krauthäuptel lettuce, and award-winning wines. The people of Graz have a unique gift for enjoying life and the Mediterranean atmosphere is palpable everywhere.

Sunny spots in cheery wine gardens, promenades in the historic city centre and narrow, atmospheric alleyways, combined with over 2,300 hours of sunshine convey a southern European flair.

CONFERENCE VENUE GRAZ

WHERE SCIENCE MEETS ART, CULTURE AND PASSION

Organisers of scientific conferences in particular have appreciated Graz as a conference destination for many years. Being Austria's second largest city as well as an important research and business location, Graz has, with good reason, evolved into a renowned conference venue that enjoys an excellent international reputation. Every year, approximately 45000 conference guests make use of the historic and modern congress centres. They appreciate the city's easy accessibility, as much as its sophisticated cuisine and famous Austrian hospitality. A variety of supporting programmes and day excursions, served with Styrian delicacies and regional wines, add culinary value to any event. Worth mentioning is the pleasant size of the Styrian capital. In fact, many of the excellent hotels are within walking distance of the conference centres. The rich choice of sights and cultural events is another decisive reason for choosing Graz.

WELCOME TO GRAZ!

" THIS PROFESSORSHIP IS A REINFORCEMENT FOR THE DEPARTMENT. IT STRENGTHENS EXISTING RESEARCH EXCELLENCE IN SAFETY AND SECURITY AT TU GRAZ. "

RODERICK BLOEM
DEAN, DEPARTMENT OF COMPUTER SCIENCE AND
BIOMEDICAL ENGINEERING AT TU GRAZ

APPLY NOW!

REQUIREMENTS FOR CANDIDATES

- A relevant national or international university education with a completed doctoral/PhD degree,
- Outstanding achievements and potential in research, excellent publication activity and international reputation.
- International experience in the form of a PhD or PostDoc position at an internationally recognized university or research center.
- Experience in the design and implementation of international research projects as well as willingness and ability to establish and lead a research group.
- Enthusiasm for excellent teaching, teaching experience or a teaching concept as well as the ability and willingness to teach in all curricular stages (Bachelor, Master, Doctorate), supervise theses and promote young scientists.

To ensure effective international representation of the research group and its work, excellent spoken and written competence in English is required. Specifically, willingness to teach courses in English is expected. Fluency in German or the willingness to acquire it is also required. The successful candidate is also expected to transfer her/his residence to the area of Graz.

EQUAL OPPORTUNITY EMPLOYER

Graz University of Technology aims to **increase the proportion of women**, in particular in management and academic staff, and therefore qualified female applicants are explicitly encouraged to apply. Until a balanced ratio of men and women has been achieved at the university, preference will be given to women if applicants are equally qualified.

Graz University of Technology **actively promotes diversity and equal opportunities**. Applicants are not to be discriminated against in personnel selection procedures on the grounds of gen-der, ethnicity, religion or ideology, age, sexual orientation (Anti-discrimination). People with disabilities who have the relevant qualifications are expressly invited to apply.

YOUR APPLICATION

Interested applicants are requested to send a detailed application in electronic form, and should quote the **position identification number 7050/19/021**:

- using the application form (**bit.ly/fmd_form**),
- including a resume (with copies of diplomas),
- a list of publications with copies of their 5 most important publications,
- a research statement describing past and planned research activities (5 pages max.),
- a teaching statement (5 pages max.) and evaluations of past teaching activities (if available),

in electronic form at the latest by

26 November 2019
(email timestamp)

to the Dean of the Faculty of Computer Science and Biomedical Engineering at Graz University of Technology, **Roderick Bloem** (**applications.csbme@tugraz.at**).

The hearings for the professorship will take place in the week from **27 January 2020**. Candidates are asked to be available for interviews in this period. For further questions please contact **the Dean's office** (**dean.csbme@tugraz.at**).

APPLY NOW!

CONTACT

Candidates should submit their detailed application to the Dean of Computer Science and Biomedical Engineering, Prof. **Roderick Bloem** (**applications.csbme@tugraz.at**).

For questions please contact the **Dean's Office** (**dean.csbme@tugraz.at**).

More on **csbme.tugraz.at**.

TU Graz

www.tugraz.at